Project	**IEEE 802.16 Broadband Wireless Access Working Group <http://ieee802.org/16>**
Title	**Enhancement of ARQ signaling in IEEE P802.16e/D2-2004**
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Re:	Call for inputs for the Handoff Ad-hoc group
Abstract	This contribution describes Enhanced ARQ signaling in IEEE P802.16e/D2-2004 by classifying ARQ into seamless ARQ and non-seamless ARQ.
Purpose	Proposal for the IEEE802.16e group.
Notice	
Release	
Patent Policy and Procedures	

ARQ signaling Enhancement

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1. Problem Statement

The current 802.16e standard draft has no explicit description on how the serving and the target BS handle the ARQ state information. Hence, the serving BS is allowed to either purge or transfer the ARQ state information to the target BS when a handover takes place, and the MSS will not know its ARQ state from which it should start after it resumes communication with the new serving BS.

2. Solution

It is strongly desired the serving BS transfers the ARQ information to the target BS to save the significant bandwidth when handover. Since the 802.16d standard does not define the procedure on the ARQ information transfer, the 16d compliant BS would presumably not support the seamless ARQ information transfer. Hence, it necessitates that the MSS should negotiate using with its (prospective) serving BS in registration (REG-REQ/RSP) and service flow addition (DSA-REQ/RSP). It can be achieved by adding an option in negotiation (REG and DSA) with a value 2, which indicates seamless ARQ support – the serving BS would transfer the ARQ information to the other BS on demand. The 16d compliant BS or the BS which do not support seamless ARQ transfer may choose an option with value of 1, which indicates non-seamless ARQ support – the BS would purge the ARQ information when handover.

3. Suggesting Text Changes in 802.16e

section 11.7.8.1

[Modify the text in section 11.7.8.1]

This field indicates the availability of SS support for ARQ.

Type	Length	Value	Scope
10	**1**	**0 : No ARQ support capability** **~~1 : ARQ supported~~** **~~2~255 : Reserved~~** **1 : Non-seamless ARQ supported** **2 : Seamless ARQ supported** **3~255 : Reserved**	**REG-REQ, REG-RSP**

section 11.13.20.1

[Modify the text in section 11.13.19.1]

This TLV indicates whether or not ARQ use is requested for the connection that is being setup. A value of 0 indicates that ARQ is not requested, ~~and~~ a value 1 indicates that non-seamless ARQ is requested, and a value 2 indicates that seamless ARQ is requested. The DSA-REQ shall contain the request to use ARQ or not. The DSA-RSP message shall contain the acceptance or rejection of the request. ARQ shall be enabled for this connection only if both sides report this TLV to be non-zero. The SS

shall either reject the connection or accept the connection with ARQ.

Type	Length	Value	Scope
[145.146].18 **1.18**	**1**	**0 = ARQ Not Requested/Accepted** **~~1 = ARQ Requested/Accepted~~** **1 = Non-seamless ARQ Requested/Accepted** **2 = Seamless ARQ Requested/Accepted**	**DSA-REQ,** **DSA-RSP,** **REG-REQ,** **REG-RSP**